

Work Order ID 67904

Monday, April 04, 2011 11:34:35 AM

Page 1.2

Item ID: D350-636-015

Accept

Revision ID:

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011 Start Qty: 1.00

Required Date: 4/6/2011 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: *mf* Date: 11-04-04 Tooling:

QC: Date: SPC (Y/N):

Cust Item ID:

Customer:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4168	A
IIN-D350-636	H

100

0.00



DC

Document Control

DOCUMENT CONTROL

Memo

0.00

Photocopy blue file and type labels per PPP D350-636-015 CHG 001

002

PER EON 11-553

NA

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Date:

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Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
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Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr, section H-H

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting, section H-H

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168, detail A

6- Drill pilot holes as per Dwg D4168 sheet 4 (D4168-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Drill most FWD wearplate hole using DT9678 locating off of 66.54" hole.

9-Open up holes of Detail A to 0.297" (total of 2 holes per side) and .201" (total of 1 hole per side) open holes of detail D-section H-H to 0.500" as per dwg D4168

10-Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left from bending as per QSI 004

BE 4/10/10

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Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

A/R Aluminum Rod batch: M116577

11-Grind welds flush as per Dwg D4168

7 BE 4/4/06

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

S 4/4/06

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

S 4/4/06



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Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

1 8 Benjoffe

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

11-4-6

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open up holes of Detail C and ground handling section AL-AL to 0.625"
(total of 8 holes per side)
as per dwg D4168.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D4168.

3- Open float hole to 0.500" (4 per side) section AJ-AJ

Open wearplate holes to size as per dwg (4 holes per sides) , section CG-CG

4-Chamfer holes of Detail B, C, ground handling section AL-AL and float holes
section AJ-AJ per dwg D4168 (welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐ Sikaflex-291 batch: M116948
exp. date: 12-1-15

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 and D4170-1
& QSI004

(welding instructions on sheet 8)

A/R ☐ Aluminum Rod batch: M116577

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

BE 11/04/06

DP

11-4-6

BE 11-04-07

BE 11-04-07

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Stop



QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

10-Grind welds flush as per Dwg D4168

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D4168, section AL-AL

12- C'bore section CG-CG

13- Deburr holes

BE 4/4/07

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8/4/07

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/4/07

16

W/O:		WORK ORDER CHANGES					
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QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

✓ Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 *φ* *Al u/aefu*

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

M/16964.

Memo

0.00

Powder Coating

START TIME: *11:40*
OVEN TEMPERATURE: *300°*
FINISH TIME: *12:10*1 *BK u-4-u.*

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

✓ Inspect for foreign object per QSI 024

1 *φ* *Al u/aefu*

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Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

0.00



HandFinish

HandFinishing

Memo

0.00

Hand Finishing

✓ 1- Install inserts as per Dwg D4168

1 0 22 4/4/11

230

0.00



HandFinish

HandFinishing

Memo

0.00

Hand Finishing

✓ 1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168
SIKA FLEX 241

✓ BATCH: 11116198

EXP DATE: 12/01

✓ 4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube
A/R 55-o-ring lube batch: 11114189

5-Coat all exposed fasteners with "LPS Procyon" batch: 11116596

1 0 23 4/4/11

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Approvals: Process Plan: Date: Tooling: Date:

Stop



QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

*Subaru**10*

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

4/4/12 11

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

11 04 12 7

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

270

0.00



Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPPD350-636-015

Location: _____

PPP rev: _____

67943

11/4/12

280

0.00



QC21- Final Inspection - Work Order Release

QC

Memo

0.00

Quality Control

11/4/12

MF

11-04-12

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Picklist Print

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Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C42A

Purchased No

230

Each

60.0000

1

1



BOLT

Location

Loc Qty

Loc Code

ST354

60

106176

60

106176

AN960JD816

Purchased No

250

Each

73.0000

2

2



1/2" washer, Alum

Location

Loc Qty

Loc Code

FP-A

73

106043

73

X2

D3873-1

Manufactured No

230

Each

177.0000

7

7



Bushing

Location

Loc Qty

Loc Code

ST088

177

64567

77

64760

100

X7

D4154-041

Manufactured No

230

Each

2.0000

1

1



Wearplate Assembly

Location

Loc Qty

Loc Code

FP009

2

65092

2

366228

X1

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Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

D4170-1

Manufactured No

230

Each

38.0000

4

4



Bushing



BE 11/04/07

Location

Loc Qty

Loc Code

LG

4

63322

4

LG002

34

65912

23

66158

11

2

D4171-1

Manufactured No

230

Each

16.0000

1

1



Bushing



11/04/11

Location

Loc Qty

Loc Code

ST135

16

65646

16

x5

MS21043-3

Purchased No

230

Each

1,072.000

5

5



Nut



11/04/11

Location

Loc Qty

Loc Code

FG

80

103691

80

FP-B

16

112314

16

x5

ST301

976

112314

976

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Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

230

Each

4,848.000

9

9



Washer



Handwritten: 9 110411

Location

Loc Qty

Loc Code

ST297

4848

113889

79

114742

4769

Handwritten: X9

NAS1515H3L

Purchased

No

230

Each

341.0000

4

4



WASHER



Handwritten: 9 110411

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

301

113362

301

Handwritten: X9

D2744

Manufactured

No

110

Each

47.0000

1

1



Cap



Handwritten: BE 11/04/06

Location

Loc Qty

Loc Code

LG002

47

62715

18

65086

29

Handwritten: 1

D2600-3-BENT

Manufactured

No

110

Each

9.0000

1

1



Extrusion Bent



Handwritten: BE 11/04/06

Location

Loc Qty

Loc Code

LG

9

66875

9

Handwritten: 1

W/O:		WORK ORDER CHANGES					
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Start Qty: 1.00

Required Qty: 1.00

D2743
Crossbolt Spacer

Manufactured No

160 Each

33.0000 8 8

Location

Loc Qty

Loc Code

LG001

33

64003

33

Manufactured No

160 Each

0.0000 1 1

D2739
350 I Beam
D3490-3

Manufactured No

160 Each

37.0000 4 4

Location

Loc Qty

Loc Code

LG001

37

63556

8

66968

29

Manufactured No

160 Each

31.0000 4 4

D3490-1
Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

31

62450

31

Purchased No

230 Each

1,305.000 4 4

ALS4-1032-225
Insert

Location

Loc Qty

Loc Code

FP-B

224

110768

224

ST282

1081

110768

1081

BEU/04/07
x6
B 67766
2

11-4-6
BEU/04/07
4

BEU/04/07
4

BEU/04/07
4

x4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:34:30 AM

Work Order ID: 67904



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

D3492-041

Manufactured No

230

Each

156.0000

8

8



Plug Assembly



Handwritten: 11/04/11

Location

Loc Qty

Loc Code

FP-B

156

63994

16

65068

20

66937

120

Handwritten: X8

AN8C35A

Purchased

No

230

Each

44.0000

1

1



BOLT



Handwritten: 11/04/11

Location

Loc Qty

Loc Code

FP-A

44

115188

3

115960

18

116874

23

Handwritten: X1

D3488-041

Manufactured

No

230

Each

13.0000

1

1



Blade Fitting Assembly, LH



Handwritten: 11/04/11

Location

Loc Qty

Loc Code

FP007

2

61689

2

FP008

11

62002

11

Handwritten: X1

W/O: 67904		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/04/11	230	Assemble with D2594-3 / MG 5518 "O" rings	del	11/04/11	x8		

Part No: D350-636-015 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:34:30 AM

Page 7

Work Order ID: 67904

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

54.0000

4

4



BOLT



all u/outer

Location

Loc Qty

Loc Code

FG

2

103964

2

FP-B

2

~~116836~~

2

x4

ST344

50

116874

50

MS21083C8

Purchased

No

230

Each

33.0000

1

1



NUT



all u/outer

Location

Loc Qty

Loc Code

FP-B

13

115884

13

ST303

20

117010

20

x1

D3631-1

Manufactured

No

230

Each

108.0000

8

8



Washer



all u/outer

Location

Loc Qty

Loc Code

FP-A

8

63647

8

ST072

100

66959

100

x8

AN960C10L

NAS1149C0332

Purchased

No

230

Each

0.0000

4

4



washer

M117291



(x4) all u/outer

Monday, April 04, 2011 11:34:30 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:34:30 AM

Work Order ID: 67904



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

D2745 Manufactured No

230 Each

64.0000 8 8



Bushing



all u/only

Location

Loc Qty

Loc Code

FP-A

23

B 64764

x 8

63315

23

ST021

41

63315

41

AN960C816L Purchased No

230 Each

0.0000 1 1



WASHER NAS 1149C08332R / M 114995



(x1) all u/only

D3492-043 Manufactured No

230 Each

83.0000 8 8



Plug Assembly



all u/only

Location

Loc Qty

Loc Code

FP-B

83

B 67765

x 8

66150

8

66931

75

P70 = 7

AN3C6A Purchased No

230 Each

280.0000 4 4



BOLT



all u/only

Location

Loc Qty

Loc Code

FP-A

45

111982

45

ST351

235

111982

10

116419

75

116549

50

116704

100

x 4

W/O: 67904

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/04/11	230	Assemble with NAS1611-013 "O" rings	JM	11/04/11	8		

Part No: D350-636-015 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:34:30 AM

Work Order ID: 67904



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

MS21043-6

Purchased No

230

Each

583.0000

4

4



NUT



all 11/04/11

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

88

112314

88

x2

ST301

475

112314

475

D3493-1

Manufactured No

250

Each

61.0000

2

2



Washer



all 11/4/12

Location

Loc Qty

Loc Code

ST062

61

62677

21

66975

40

AA

62677

MS21083C8

Purchased No

250

Each

33.0000

2

2



NUT



all 11/04/11

Location

Loc Qty

Loc Code

FP-B

13

115884

13

ST303

20

117010

20

x2

AN8C21A

Purchased No

250

Each

56.0000

2

2



BOLT



all 11/04/11

Location

Loc Qty

Loc Code

ST345

56

116381

56

x2

Monday, April 04, 2011 11:34:30 AM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 10

Monday, April 04, 2011 11:34:30 AM

Work Order ID: 67904



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/4/2011

Required Date: 4/6/2011

Start Qty: 1.00

Required Qty: 1.00

D2741

Manufactured No

250

Each

69.0000

1

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

69

61341

29

63589

40

1 11/04/11

1..

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

#67904

RELEASED
2010-09-15

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

A	NEW ISSUE	SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

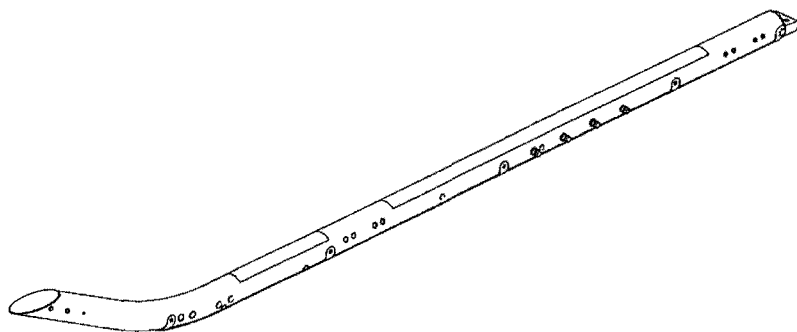
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

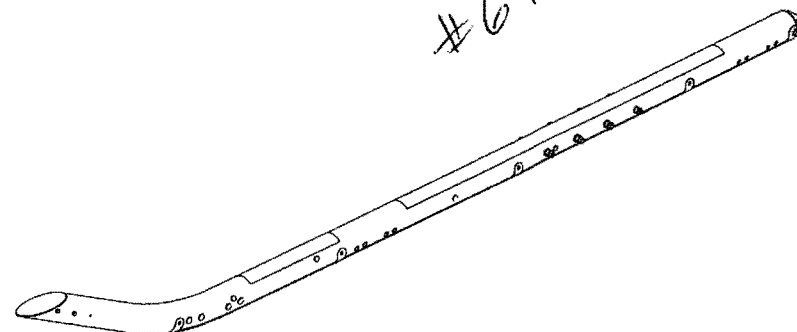
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	SC	DRAWING NO. D4168	REV. A
MFG. APPR.			SHEET 2 OF 11
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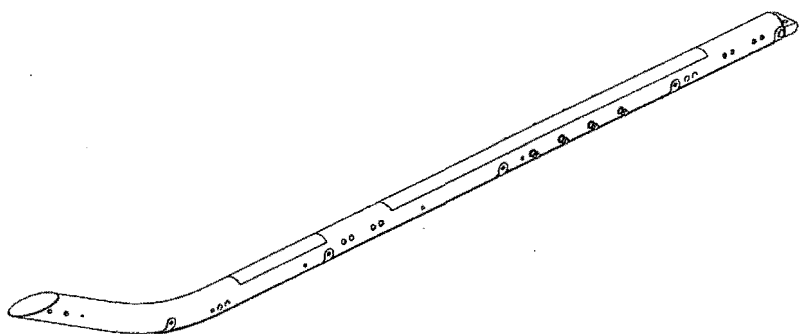
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

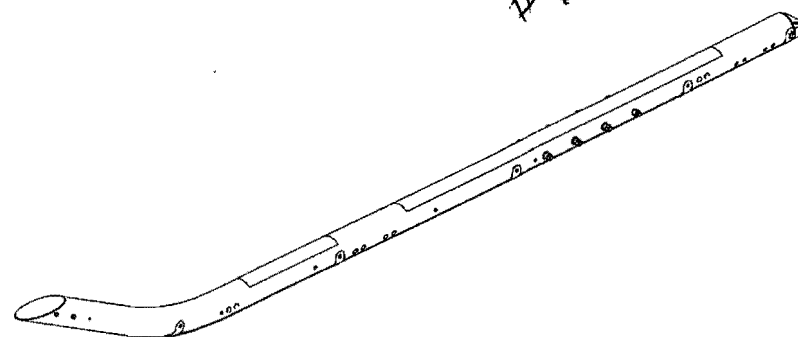
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

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DRAWN	SC		
CHECKED		DRAWING NO. D4168	REV. A
MFG. APPR.			SHEET 3 OF 11
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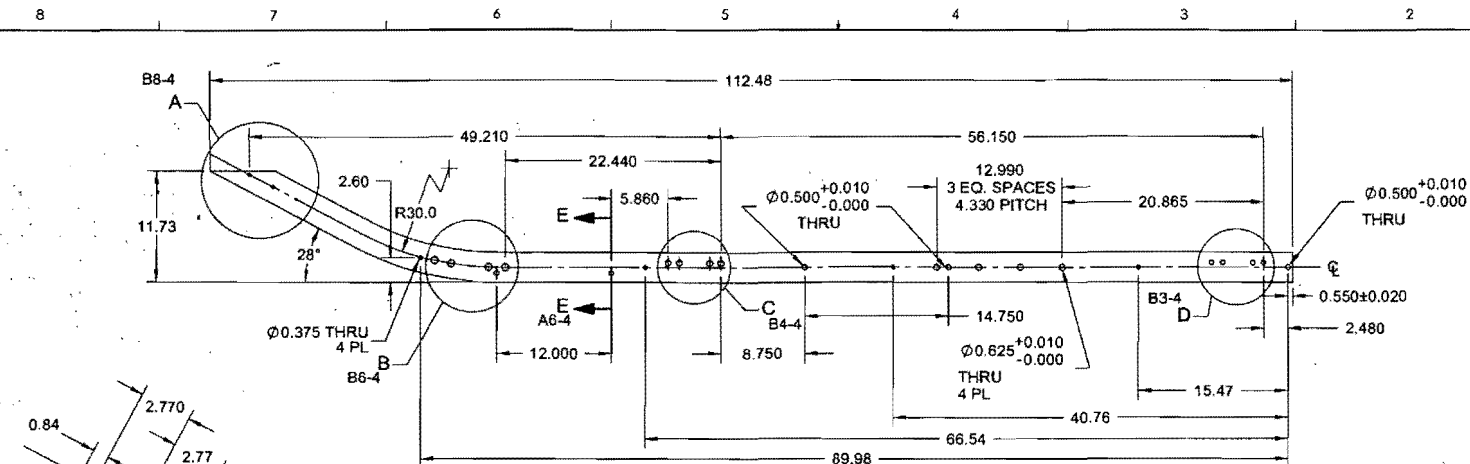
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

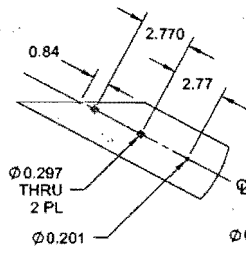
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

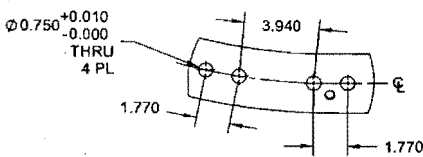
NOTE: Date & initial all entries



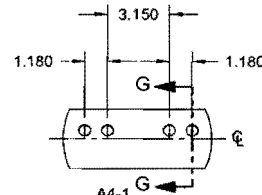
D4168-1 LH SKIDTUBE



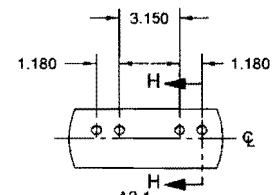
DETAIL A
SCALE 2X



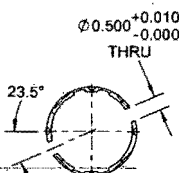
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SCALE 2X



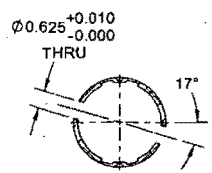
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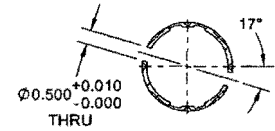
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	UP	DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 4 OF 11
APPROVED	AW	TITLE	SCALE
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#67904

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R 2010-09-15

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

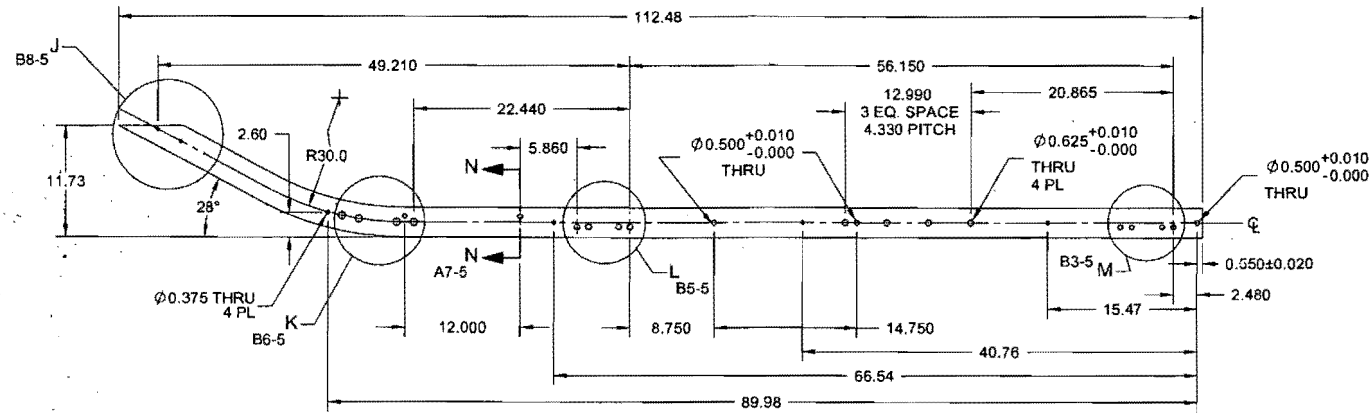
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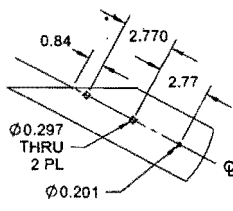
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

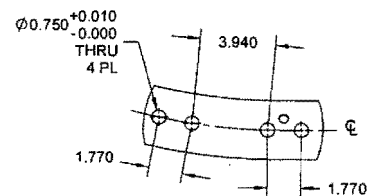
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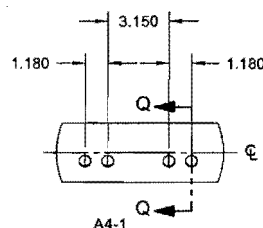
D4168-2 RH SKIDTUBE



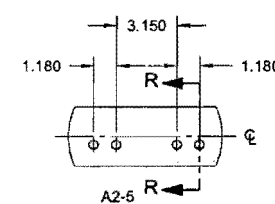
DETAIL J
SCALE 2X



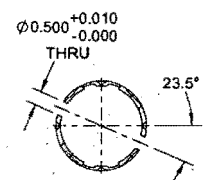
DETAIL K
SCALE 2X



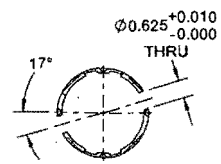
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SCALE 2X



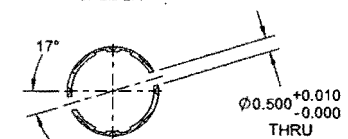
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

DESIGN	SC	DART AEROSPACE USA, INC.	
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MFG. APPR.		D4168	SHEET 5 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS.
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#67904

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2010-09-15
MD

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Dart Aerospace Ltd

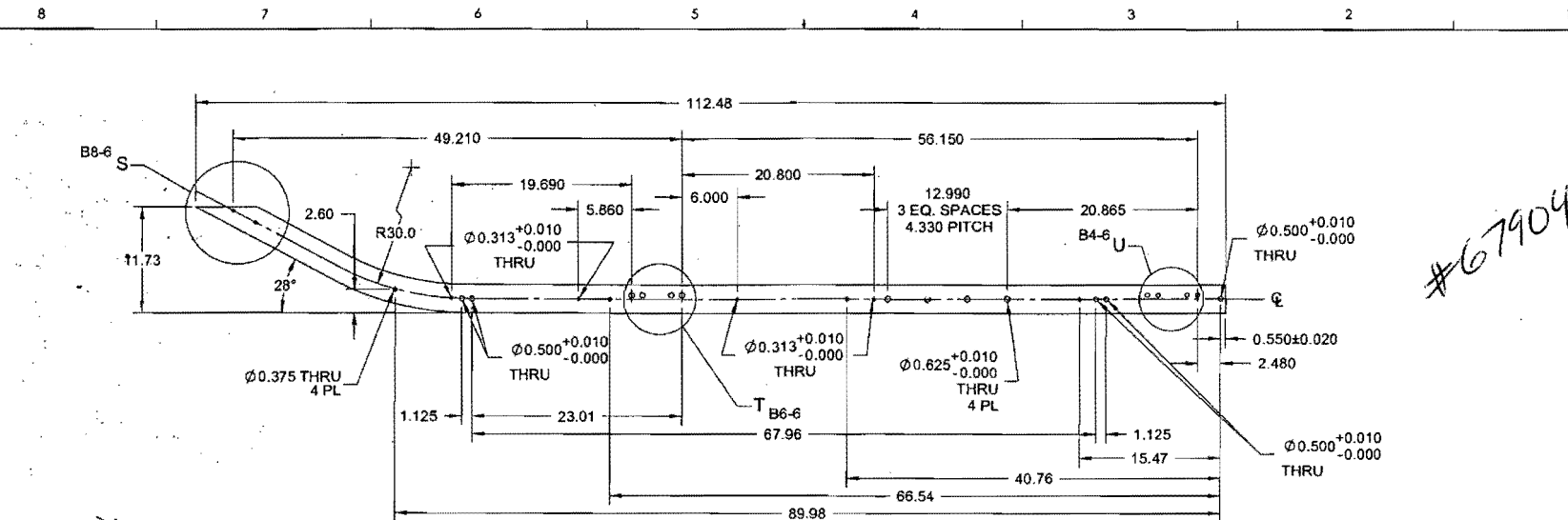
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

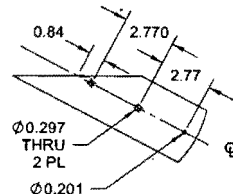
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

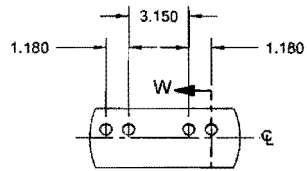
NOTE: Date & initial all entries



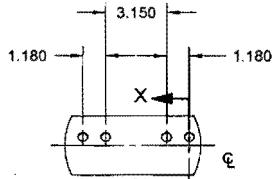
D4168-3 LH SKIDTUBE



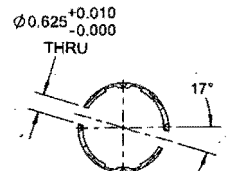
DETAIL S
D8-6
SCALE 2X



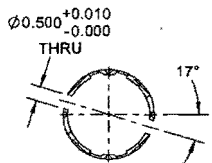
DETAIL T
C5-6
SCALE 2X



DETAIL U
D3-6
SCALE 2X



SECTION W-W
B6-6
SCALE 3X, 4 PL



SECTION X-X
B4-6
SCALE 3X, 4 PL

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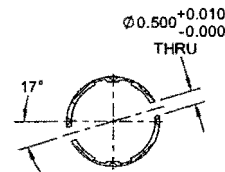
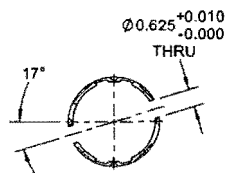
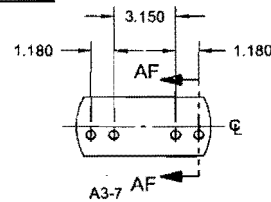
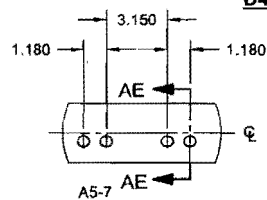
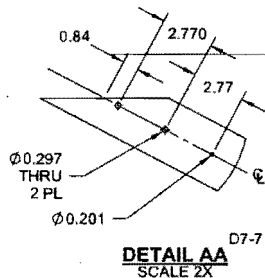
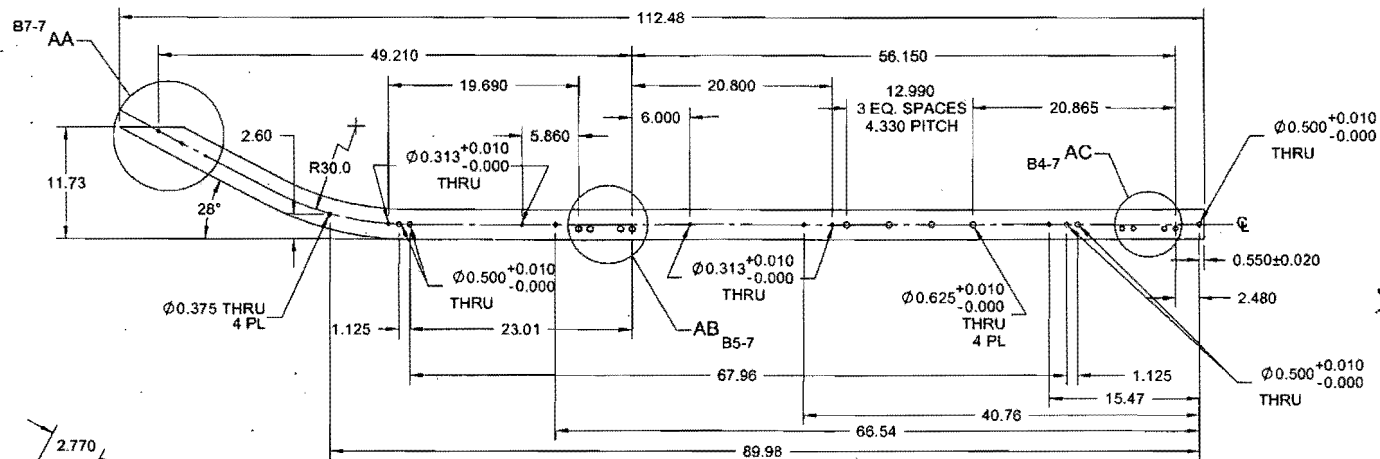
8 7 6 5 4 3 2 1

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A



D4168-4 RH SKIDTUBE

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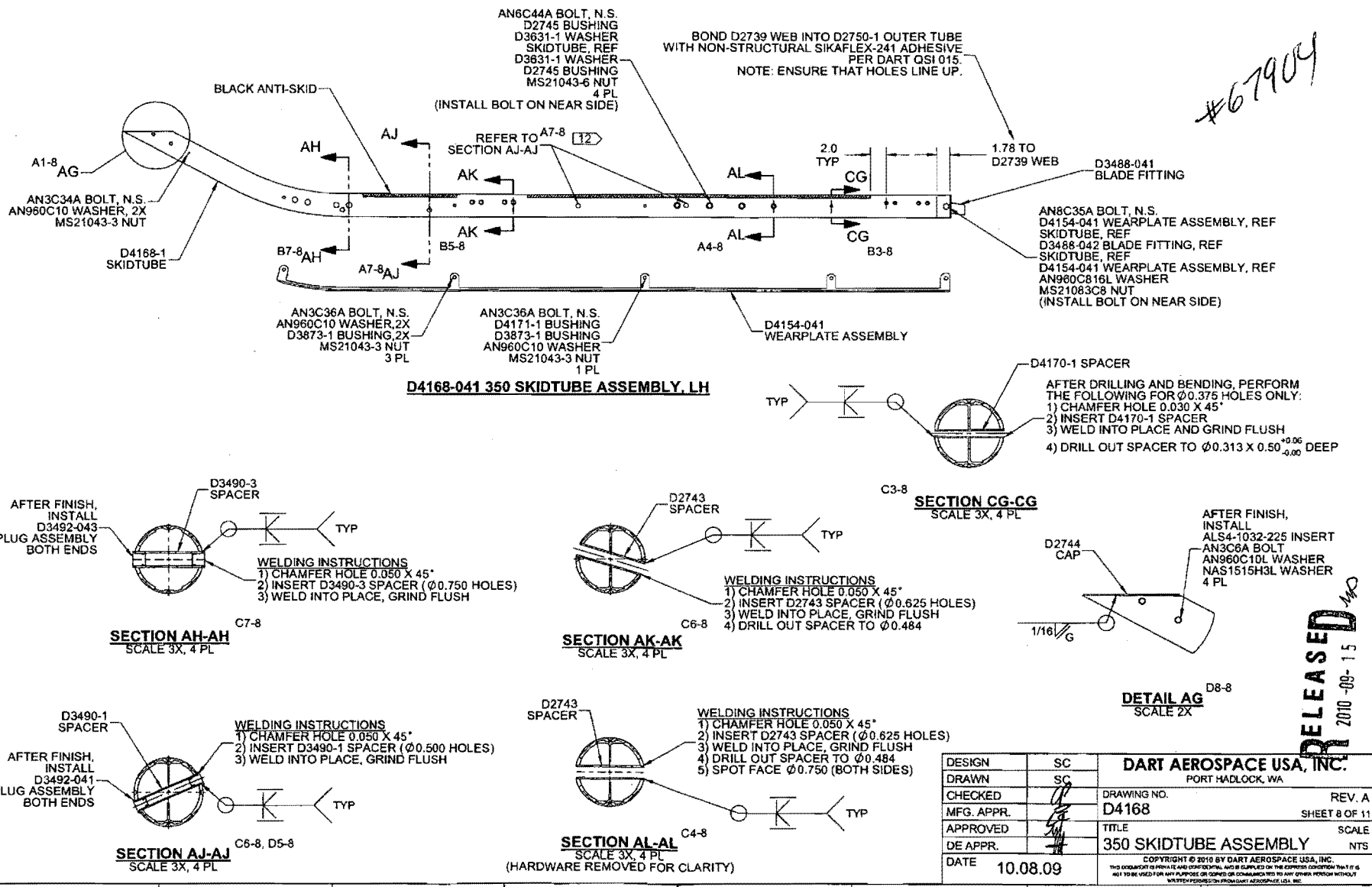
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

#67909



D4168-041 350 SKIDTUBE ASSEMBLY, LH

AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR $\phi 0.375$ HOLES ONLY:
 1) CHAMFER HOLE $0.030 \times 45^\circ$
 2) INSERT D4170-1 SPACER
 3) WELD INTO PLACE AND GRIND FLUSH
 4) DRILL OUT SPACER TO $\phi 0.313 \times 0.50$ DEEP

SECTION AH-AH
SCALE 3X, 4 PL

WELDING INSTRUCTIONS
 1) CHAMFER HOLE $0.050 \times 45^\circ$
 2) INSERT D3490-3 SPACER ($\phi 0.750$ HOLES)
 3) WELD INTO PLACE, GRIND FLUSH

SECTION AK-AK
SCALE 3X, 4 PL

WELDING INSTRUCTIONS
 1) CHAMFER HOLE $0.050 \times 45^\circ$
 2) INSERT D2743 SPACER ($\phi 0.625$ HOLES)
 3) WELD INTO PLACE, GRIND FLUSH
 4) DRILL OUT SPACER TO $\phi 0.484$

SECTION AJ-AJ
SCALE 3X, 4 PL

WELDING INSTRUCTIONS
 1) CHAMFER HOLE $0.050 \times 45^\circ$
 2) INSERT D3490-1 SPACER ($\phi 0.500$ HOLES)
 3) WELD INTO PLACE, GRIND FLUSH

SECTION AL-AL
SCALE 3X, 4 PL

WELDING INSTRUCTIONS
 1) CHAMFER HOLE $0.050 \times 45^\circ$
 2) INSERT D2743 SPACER ($\phi 0.625$ HOLES)
 3) WELD INTO PLACE, GRIND FLUSH
 4) DRILL OUT SPACER TO $\phi 0.484$
 5) SPOT FACE $\phi 0.750$ (BOTH SIDES)

DETAIL AG
SCALE 2X

AFTER FINISH, INSTALL ALS4-1032-225 INSERT AN3C6A BOLT AN960C10L WASHER NAS1515H3L WASHER 4 PL

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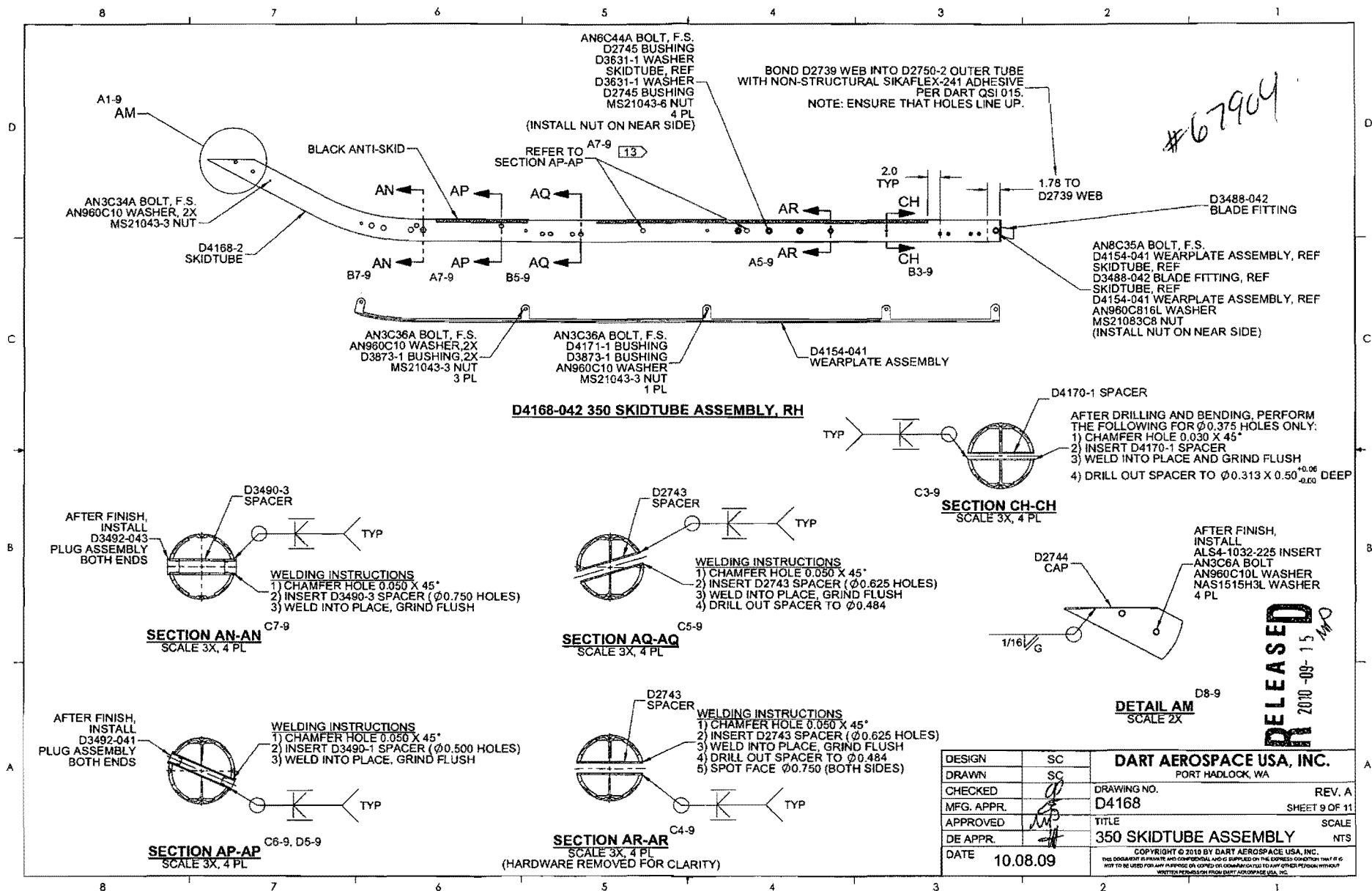
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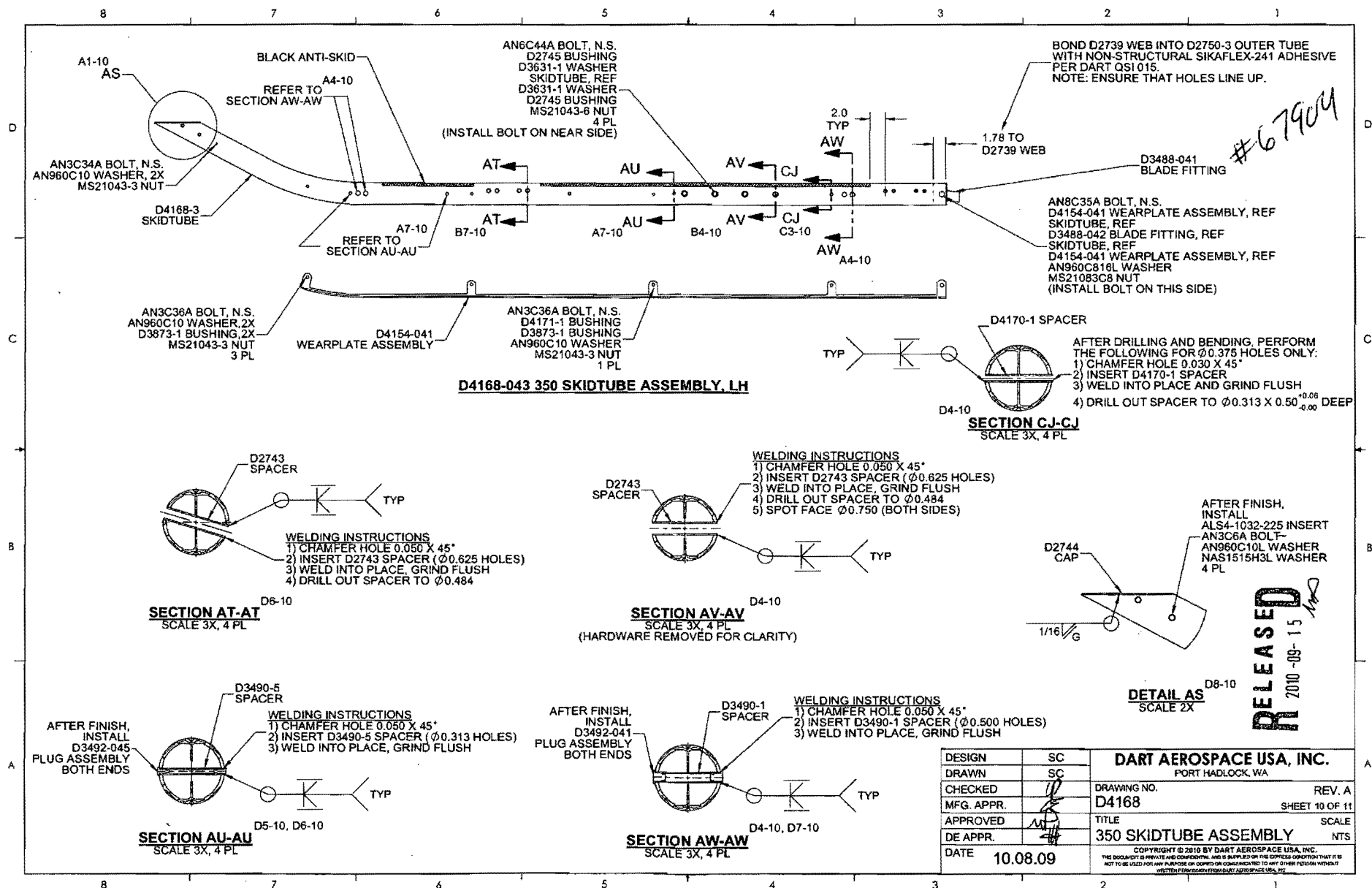
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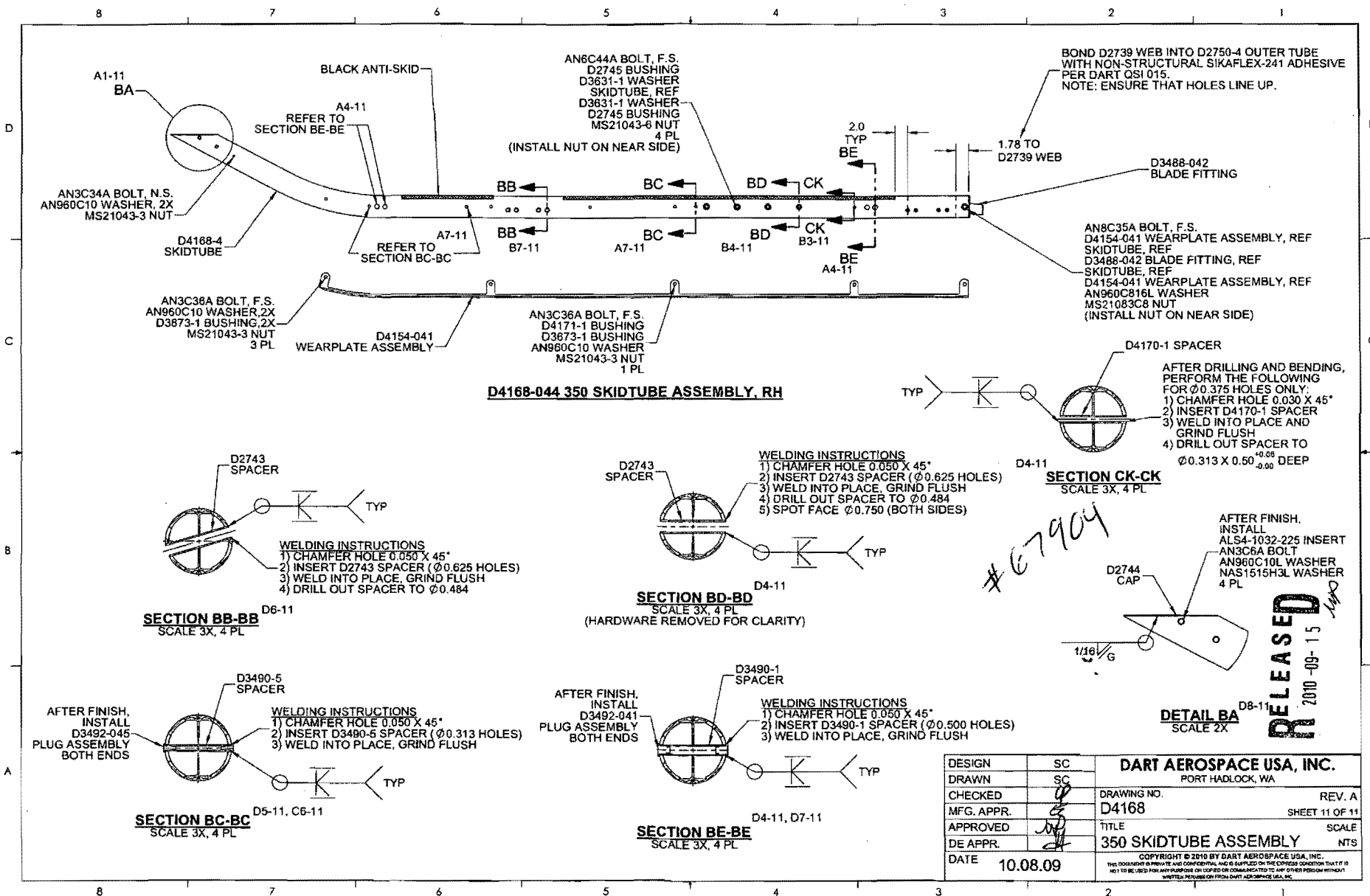
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NO. 248

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 67178
Part number: D350 636 015
Description: 350
Welding Process: Tig ☒ Mig ☐
Base material: Aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat. Barry Date of Test Coupon 11.04.05
Welder Barclay Elliott Date of Test Coupon 11.04.05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

